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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/771,274

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Shih Yang Lee

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EXAMINER

WANG, KENT F

ART UNIT

PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/771,274

Applicant(s)

LEE, SHIH YANG

Examiner

Kent Wang

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 8 is rejected under 35 U.S.C. § 102(b) as being anticipated by Ueno, US 5,625,415.

Regarding claim 8, Ueno discloses a method for capturing in-focus comprises:

- providing a topic object (i.e. a person as in figure 14) and a background object (i.e. a mountain as in figure 14);
- and capturing number of photos (e.g. an image shooting and a pre-shooting; see col. 17, lines 61-67), the number of photos correspond an exposure value (see col. 7, line 14 to col. 8, line 5), one of the number of images includes topic object and background object based on a distance in focus (e.g. defined by parameters such as a focal length; see col. 22, lines 1-13), each distance in focus correspond to a depth of field (e.g. focal length 122 correspond to depth of field 1214; see col. 22, lines 1-13), wherein each depth of field relative to

corresponding distance in focus overlapping partial portion of other depth of field relative to other distance in focus (see figures 19 and 20 for overlap of different depth-of-lengths, e.g. b, c, and d), the topic object within one of the depth of field relative to the corresponding distance in focus (e.g. topic object "P_d" has a depth of field "d" corresponding distance "D"; see figure 20) .

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 12, and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueno in view of Vlahos, US 6,646,687.

Regarding claim 1, Ueno discloses a method for capturing the image comprises:

- (a) providing a topic object (i.e. a person as in figure 14) and a background object (i.e. a mountain as in figure 14);
- (b) capturing a first photo (i.e. a pre-shooting button 1312), the first photo includes topic object and background object, wherein the first distance in focus corresponds to an exposure value and a first depth of field (e.g. calculating the exposure value concerning the image

shooting on the basis of image data involved in the area information;
see col. 2, line 65 to col. 3, line 48)

- (c) acquiring a second distance in focus, wherein the second distance in focus corresponds to exposure value and a second depth of field (i.e. a depth of field information generating unit 1214), and the second depth of field relative to second distance in focus overlaps a partial portion of first depth of field relative to the first distance in focus (see figures 19 and 20 for overlap of different depth-of-length);
- (d) capturing a second photo (i.e. a shooting button 1314), according to the second distance in focus, the second photo includes topic object and background object;
- and (e) replacing the first distance in focus with the second distance in focus, and repeating step (c) and step (d) till topic object within second depth of field relative to second distance in focus (e.g. correction processing unit 1216 serves to correct the condition for image shooting; see col. 22, lines 44-65).

Ueno does not does not explicitly teach the capturing a first photo according to a first distance in focus to the background object (or negative out of focus). In same field of endeavor, Vlahos teaches the defocus logic would normally return the background to sharp focus even though the camera lens is not changing its focus (see col. 2, lines 52-63). It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have provided a defocus logic as taught by Vlahos to the camera system of Ueno

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because the results in a defocusing of the background scene in proportion to the apparent reduction in camera to subject distance and there is no need to continue defocusing (see col. 2, lines 34 – 44 of Vlahos).

Regarding claim 12, Ueno discloses an image-capturing device comprising a processor for capturing number of photos (e.g. an image shooting 1312 and a pre-shooting 1314; see col. 17, lines 61-67), the number of photos correspond an exposure value (see col. 7, line 14 to col. 8, line 5), one of the number of images includes topic object and background object based on a distance in focus (e.g. defined by parameters such as a focal length; see col. 22, lines 1-13), each distance in focus correspond to a depth of field (e.g. 122 correspond to 1214; see col. 22, lines 1-13), wherein each depth of field relative to corresponding distance in focus overlapping partial portion of other depth of field relative to other distance in focus (see figures 19 and 20 for overlap of different depth-of-lengths), the topic object within one of the depth of field relative to the corresponding distance in focus (e.g. topic object "P_d" has a depth-of-field "d" corresponding distance "D"; see figure 20) .

Ueno does not does not explicitly teach the image-capturing device with a negative out-of-field module. In same field of endeavor (automatic background defocusing), Vlahos teaches an image-capturing device with a negative out of focus module (i.e. automatic background scene defocusing). Vlahos teaches:

- an input device (user presets the defocus values), for inputting an item of the negative out of focus module (see col. 3, lines 30-40 and col. 4, lines 21-24);

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- a storage (LUT), for storing a plurality of programs for negative out of focus module (see col. 4, lines 43-49);
- a capturing device (1-3), for performing the command;
- and a controller (6), for receiving the command and control the capturing device in accordance with the command (see figure 6 and col. 4, lines 18-49).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to have provided a automatic background defocusing algorithm as taught by Vlahos to the camera system of Ueno. The motivation to do so would have benefit of using a automatic background scene defocusing as the background scene is being composited with the foreground subject during the photography of the subject, thus resulting what would have occurred if the background had been real and the defocus and refocus rate is controllable (see abstract and col. 1. lines 17-42 of Vlahos).

Regarding claim 13, Ueno teaches a storage (120) for storing a plurality of readable programs capable of capturing a plurality of photos by an image-capturing device, said readable programs enabling the image-capturing device executing the steps:

- (a) capturing a first photo (i.e. a pre-shooting button 1312 of Ueno), according to a first distance in focus to a background object (see column 2, lines 52-63 of Vlahos) and the first photo includes topic object and background object, wherein the first distance in focus corresponds to an exposure value and a first depth of field (e.g.

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calculating the exposure value concerning the image shooting on the basis of image data involved in the area information; see col. 2, line 65 to col. 3, line 48 of Ueno)

- (b) acquiring a second distance in focus, wherein the second distance in focus corresponds to exposure value and a second depth of field (i.e. a depth of field information generating unit 1214), and the second depth of field relative to second distance in focus overlaps a partial portion of first depth of field relative to the first distance in focus (see figures 19 and 20 for overlap of different depth-of-length);
- (c) capturing a second photo (i.e. a shooting button 1314), according to the second distance in focus, the second photo includes topic object and background object;
- and (d) replacing the first distance in focus with the second distance in focus, and repeating step (b) and step (c) till topic object within second depth of field relative to second distance in focus (e.g. correction processing unit 1216 serves to correct the condition for image shooting; see col. 22, lines 44-65).

5. Claims 2 - 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueno in view of Vlahos as applied to claim 1, and further in view of Rinn, US 4,646,687.

Regarding claim 2, note the discussion of Ueno and Vlahos claim 1 above. Ueno and Vlahos do not teach the calculation of first and second depth of field.

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However, Rinn teaches the first depth of field is calculated from first distance in focus (f), a first front depth of field ($U1$), and a first back depth of field ($U2$) (see col. 1, line 67 to col. 2, line 28). It would have been obvious to one of ordinary skill in the art at the time this invention was made to have used a automatic background scene defocusing as taught by Vlahos to the camera system of Ueno as modified by Rinn so that it makes possible taking into account the spatial depth range of the object being photographed, and for which the focusing over a specific spatial depth range is possible in relation to the depth of field of the objective as determined by its stop size (see col. 1, lines 56-62).

Regarding claims 3 and 6, Rinn teaches the front depth of field ($U1$) is a distance (A_0) of a near point in front of background object (see col. 1, line 67 to col. 2, line 28).

Regarding claims 4 and 7, Rinn teaches the back depth of field ($U2$) is a distance (A_0) of a near point in back of background object (see col. 1, line 67 to col. 2, line 28).

Regarding claim 5, Rinn teaches the second depth of field is calculated from second distance in focus (f), a second front depth of field ($U1$), and a second back depth of field ($U2$) (see col. 1, line 67 to col. 2, line 28).

6: Claims 9- 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueno in view of Rinn.

Regarding claims 9-11, these claims are recited same limitations as claims 2-7. Thus they are analyzed as previously discussed with rejected to claims 2-7 above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Nachshon et al. (US 5,668,605) disclose a method for separating a first image into two or more portions, such as foreground and background portions, based on the distance of the portions from a camera.
- Aoki et al. (US 3,896,304) disclose a method and apparatus for negative out of focus for automatic focus adjustment means.
- Battles et al. (US 7,116,364) disclose a digital camera maintains a consistent effective focal length upon switching from a first focus mode to a second focus mode and the focus modes having different maximum focal lengths.
- Nourbakhsh et al. (US 5,793,900) disclose a method for generating a categorical depth map of a scene using passive defocus sensing.

Inquiries

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Wang whose telephone number is 571-270-1703. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on 571-272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-270-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kent Wang
19 March 2007


CHANH D. NGUYEN
SUPERVISORY PATENT EXAMINER